

U.S.S.N. 09/273,691

REMARKS

Thorough examination and careful review of the application by the Examiner is noted and appreciated.

Claims 1-5, 7-18 and 20-22 are pending in the application. Claims 1-5, 7-18 and 20-22 stand rejected.

Claim Rejections Under 35 USC §103

Claims 1-5, 7-18 and 20-22 are rejected under 35 USC §103(a) as being unpatentable over Kim et al '948, in view of Kim et al '341 and Fujikawa et al '178.

In the "Examiner's Response to Applicant's Only Arguments" section of the Office Action (at page 6), the Examiner contended:

"(1) Kim's 341 discloses (col. 3, lines 12-28, and Fig. 2) that the black matrix (20) is formed by appropriately patterning a light-shielding layer

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using a conventional photolithography process to define the aperture area (i.e., formation of openings that are directly over the cross point), so that the laser beam can pass the aperture to perform the repair for the buslines, and the laser beam will heat the wires for welding a repair line to a busline or for severing the shorts."

Kim '341 is the primary reference, or the only reference, the Examiner relied upon for teaching "defining an aperture area in a black matrix layer and forming openings directly over the cross point of a repair line and a busline, i.e. the key elements of the present invention. For instance, the present invention independent claim 1 recites:

"Claim 1. A front-side repairable TFT-LCD assembly comprising:

a TFT-LCD equipped with a first multiplicity of buslines,

at least one repair line positioned outside of and in parallel with a circuitry on said TFT-LCD, said at least one repair line

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intersects said first multiplicity of buslines with an insulating layer thereinbetween, and a black matrix film coated on a glass substrate positioned juxtaposed to said repair lines and buslines, said black matrix film having a second multiplicity of apertures formed therethrough each corresponding to a location where one of said at least one repair line intersects said first multiplicity of buslines allowing a laser to pass therethrough for welding a repair line to a busline."

The Applicants respectfully submit that, the Kim '341 reference and specifically Fig. 2 and col. 3, lines 12-28 that the Examiner relied upon, teaches something that is completely unrelated to the present invention. Fig. 2 shows a liquid crystal device that has an aperture area, a color filter 21a, an electrode layer 23, a thick liquid crystal layer in-between the electrode layer 23 and the protective layer 6, and a pixel electrode 4. The apparatus is sandwiched in-between an upper glass layer 101 and a

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lower glass layer 100. The aperture shown by Kim in Fig. 2 is a LCD display window that is equipped with a color filter 21a and a liquid crystal filling between the two glass plates. The fact that Kim discusses aperture ratio (col. 6, lines 61-62) further indicates that the aperture is for a LCD cell for display of images and not for repair.

On the contrary, the present invention structure, as shown in Figs. 3 and 4, clearly does not contain a liquid crystal layer between the two glass plates. As clearly recited in independent claim 1, "at least one repair line positioned outside of and in parallel with a circuitry on said TFT-LCD". The repair line taught by the present invention is thus positioned outside of the LCD area, contrary to that shown by Kim. As a matter of fact, in the structure shown by Kim in Fig. 2, it would not have been possible to irradiate a laser beam through the liquid crystal layer to effect a repair by welding two metal layers together. In the section of Kim '341 recited by the Examiner, i.e. col. 3, lines 12-28, neither the word "repair" nor the words "irradiating a laser beam to effect a repair" can be found. The apertures provided in the black matrix film of Kim '341 therefore, has nothing to do with repair as taught by the present invention.

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The Applicants further submit that the provision of apertures in a black matrix film to effect a repair is further not taught, disclosed or suggested by Kim or Fujikawa.

The rejection of claims 1-5, 7-18 and 20-22 under 35 USC §103(a) based on Kim '948, Kim '341 and Fujikawa '178 is respectfully traversed. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Based on the foregoing, the Applicants respectfully submit that all of the pending claims, i.e. claims 1-5, 7-18 and 20-22, are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited.

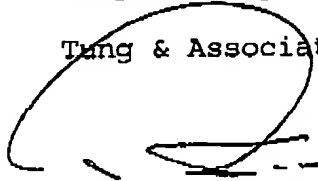
In the event that the present invention is not in a condition for allowance for any other reasons, the Examiner is respectfully invited to call the Applicants' representative at his

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Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

Respectfully submitted,

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